

## REMARKS/ARGUMENTS

Claims 1-13 are pending herein. Claims 1-13 have been amended hereby to correct minor matters of form and for clarification purposes only. In the specification, paragraph numbers [0019], [0021], [0023], [0024] and [0034] and section headings on pages 1 and 4 have been amended to correct minor matters of form. The Abstract was rewritten to correct minor matters of form, as well. Applicant respectfully submits that no new matter has been added.

1. Applicant appreciates the Examiner indicating that claims 8-13 are allowed. Applicant respectfully submits that all claims pending herein are in condition for allowance for the reasons explained below.

2. Claims 2-6 were objected to as being dependent upon a rejected base claim. Applicant appreciates the Examiner indicating that claims 2-6 would be allowable if rewritten in independent form.

Claims 2-6 depend either directly or indirectly from independent claim 1, which Applicant respectfully submits is in condition for allowance for the reasons explained below. As such, Applicant respectfully submits that claims 2-6 are in condition for allowance as presently pending. Accordingly, Applicant respectfully requests that the above objection be reconsidered and withdrawn.

3. Claims 1 and 7 were rejected under §102(b) over Kenichiro (JP '019). Applicant respectfully traverses this ground of rejection.

Independent claim 1 recites an apparatus for outputting a laser beam comprising a laser beam source and laser beam diameter adjusting means. The laser beam diameter adjusting means adjusts the diameter of a beam incident from the laser beam source. The apparatus also includes laser beam reflecting direction controlling means, which controls the reflecting direction of the beam incident from the laser beam diameter adjusting means, and recording means for recording information data

in accordance with the diameter of the beam incident from the laser beam reflecting direction controlling means.

In a laser printer apparatus, for example, laser beams are typically modulated and deflected to form an electrostatic latent image pattern on a photosensitive body, which is then developed with toner to record a character or image on paper. Conventional beam modulation is typically performed by on-off beam control, and the resulting image output is in the form of microdot sets. With these laser printers, for example, an area modulating method is used as a gradation rendering method, wherein the area ratio of the microdots is changed by changing the number of dots per micro unit area. The present invention addresses the problems with such conventional area modulation methods described in the present specification, such as concentration jumps and gradation discontinuity, by modulating the dot diameter rapidly and continuously without requiring that the strength of the laser beam be modulated or requiring that the thickness of the toner material be controlled when performing gradation. As a result, more stable recording (printing) is provided.

In the Office Action, while the PTO asserted that JP '019 anticipated claims 1 and 7, an English translation of JP '019 was not provided; the PTO relied on the figures of JP '109 alone to support this rejection. The PTO asserted that JP '019 "shows a [*sic*, an] apparatus for outputting a laser beam comprising: a laser beam source (21, 22), a laser beam diameter adjusting means (29), a laser beam reflecting direction controlling means (23) and recording means (11)" (Office Action, page 3, section 5). Applicant respectfully submits, however, that the piezoelectric element 29 of JP '019 is not a "laser beam diameter adjusting means" as the PTO asserted.

Attached hereto as Appendix A is an English Abstract of JP '019. Applicant respectfully submits that it is clear from the Abstract of JP '019 that the piezoelectric element 29 of JP '019 operates to adjust the emission interval between the two laser beams based on the potential difference data generated by the surface potentiometer 20 in connection with the control circuit 35, but does not in any way adjust the diameter of either laser beam. As such, the piezoelectric element 29 cannot be considered a laser beam diameter adjusting means, as recited in independent claim 1.

For at least the foregoing reasons, Applicant respectfully submits that independent claim 1, and all claims depending therefrom, define patentable subject matter over JP '019. Accordingly, Applicant respectfully requests that the above rejection be reconsidered and withdrawn.

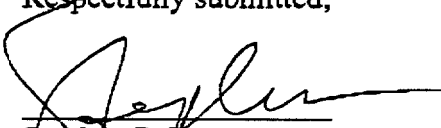
If the Examiner believes that contact with Applicant's attorney would be advantageous toward the disposition of this case, the Examiner is herein requested to call Applicant's attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

August 5, 2003

Date

  
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Attachment: Appendix A - JP '019 English Abstract

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## PATENT ABSTRACTS OF JAPAN

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(21)Application number : 09-134823 (71)Applicant : RICOH CO LTD

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## (54) IMAGE-FORMING APPARATUS

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To prevent an image density from being thin or thick by detecting an electrostatic latent image potential on a photosensitive body and adjusting an interval of a plurality of light beams on the basis of the detection result.

**SOLUTION:** Two laser beams from laser light sources 21, 22 are passed through waveform-shaping lenses 25, 26. The laser beam passing the waveform-shaping lens 25 is reflected at a reflecting mirror 27. The laser beams are synthesized by an optical element 31, deflected and scanned by a polygon mirror 23 and projected on a photosensitive drum 11.

An electrostatic latent image is formed on the photosensitive drum 11. A surface

potentiometer 20 detects a first electrostatic latent image potential and a second electrostatic latent image potential shaped like a linear pair pattern on the photosensitive drum 11, and inputs to a control circuit 35. The control circuit 35 obtains an average value of the first and second electrostatic latent image potentials on the basis of potential detection signals. A piezoelectric element 29 is controlled so that a difference between the average value and a target value is within a predetermined value, whereby an emission interval of two laser beams is adjusted to be roughly ideal.

